

WHAT IS CLAIMED IS:

1. A belt type continuously variable transmission comprising a variable width drive pulley, a variable width driven pulley, and a V belt, which is disposed around said drive and driven pulleys;

wherein:

a contour of a contact surface being in contact with said V belt in a cross-sectional view through axes of said drive and driven pulleys is an arc that has a first radius of curvature r_p and is convex to said V belt;

a contour of a contact surface being in contact with said drive and driven pulleys in a cross-sectional view perpendicular to a longitudinal direction of said V belt is an arc that has a second radius of curvature r_e and is convex to the contact surface of said drive and driven pulleys; and

a contact point moving on the contact surfaces of said drive and driven pulleys and said V belt for a speed ratio change satisfies the following equation:

$$\Delta l_e / \Delta l_p = r_e / r_p$$

the Δl_p being a distance over which said contact point migrates in the cross-sectional view through the axes of said drive and driven pulleys, and the Δl_e being a distance over which said contact point migrates in the cross-sectional view perpendicular to the longitudinal direction of said V belt.

2. The belt type continuously variable transmission as

set forth in claim 1, wherein:

the center O_p of the arc having said first radius of curvature r_p , which forms the contact surface in contact with said V belt in the cross-sectional view through the axes of said drive and driven pulleys, is positioned away from the axes of said drive and driven pulleys.

3. The belt type continuously variable transmission as set forth in claim 2, wherein:

said center O_p is positioned on another side across the axes of said drive and driven pulleys opposite to a side of the contact surface in contact with said V belt.

4. The belt type continuously variable transmission as set forth in claim 1, wherein:

said V belt comprises a plurality of elements, which are connected in series, and a ring, which is placed on saddle faces of said elements; and

the center O_e of the arc having said second radius of curvature r_e , which forms the contact surface in contact with said drive and driven pulleys in the cross-sectional view perpendicular to the longitudinal direction of said V belt, is positioned away from upper ends of said saddle faces.

5. The belt type continuously variable transmission as set forth in claim 4, wherein:

said center O_e is positioned away upward from the upper

ends of said saddle faces.

6. The belt type continuously variable transmission as set forth in claim 1, wherein:

ratio of the radius of curvature r_e of said V belt to the radius of curvature r_p of said drive and driven pulleys satisfies the following equation:

$$0.02 < r_e/r_p < 0.12$$

7. The belt type continuously variable transmission as set forth in claim 6, wherein:

the center O_p of the arc having said first radius of curvature r_p , which forms the contact surface in contact with said V belt in the cross-sectional view through the axes of said drive and driven pulleys, is positioned away from the axes of said drive and driven pulleys.

8. The belt type continuously variable transmission as set forth in claim 7, wherein:

said center O_p is positioned on another side across the axes of said drive and driven pulleys opposite to a side of the contact surface in contact with said V belt.

9. The belt type continuously variable transmission as set forth in claim 6, wherein:

said V belt comprises a plurality of elements, which are connected in series, and a ring, which is placed on saddle faces of said

elements; and

the center Oe of the arc having said second radius of curvature re, which forms the contact surface in contact with said drive and driven pulleys in the cross-sectional view perpendicular to the longitudinal direction of said V belt, is positioned away from upper ends of said saddle faces.

10. The belt type continuously variable transmission as set forth in claim 9, wherein:

said center Oe is positioned away upward from the upper ends of said saddle faces.

11. The belt type continuously variable transmission as set forth in any of claims 1, wherein:

said contact surfaces are configured such that the center of said V belt in its longitudinal direction is always perpendicular to the axes of said drive and driven pulleys irrespective of speed change condition.

12. The belt type continuously variable transmission as set forth in any of claims 1, wherein:

said drive pulley comprises a drive side stationary pulley half, which is disposed axially immovable on a drive shaft, and a drive side movable pulley half, which is disposed on said drive shaft and axially movable with respect to said drive side stationary pulley half;

said driven pulley comprises a driven side stationary pulley half, which is disposed axially immovable on a driven shaft,

and a driven side movable pulley half, which is disposed on said driven shaft and axially movable with respect to said driven side stationary pulley half;

said drive side stationary pulley half and said driven side movable pulley half are positioned to overlap each other in a direction perpendicular to the axes of said drive and driven pulleys; and

said drive side movable pulley half and said driven side stationary pulley half are positioned to overlap each other in the direction perpendicular to said axes.